

ABSTRACT OF THE DISCLOSURE

Ion particles are discharged so as to be trapped with magnetic field lines of the earth, and collided with high-altitude neutral air to generate high velocity neutral particles through charge exchange. The high velocity neutral particles are trapped. In this case, the distance to the high-altitude neutral air from at least one of the discharging positions of the ion particles and the trapping positions of the high velocity neutral particles is determined on the period of time between the discharging timings of the ion particles and the trapping timings of the high velocity neutral particles. Moreover, the direction of the high-altitude neutral air is determined on the trapping direction of the high velocity neutral particles. In addition, the space position of the high-altitude neutral air is determined on the trapping direction of the high velocity neutral particles.